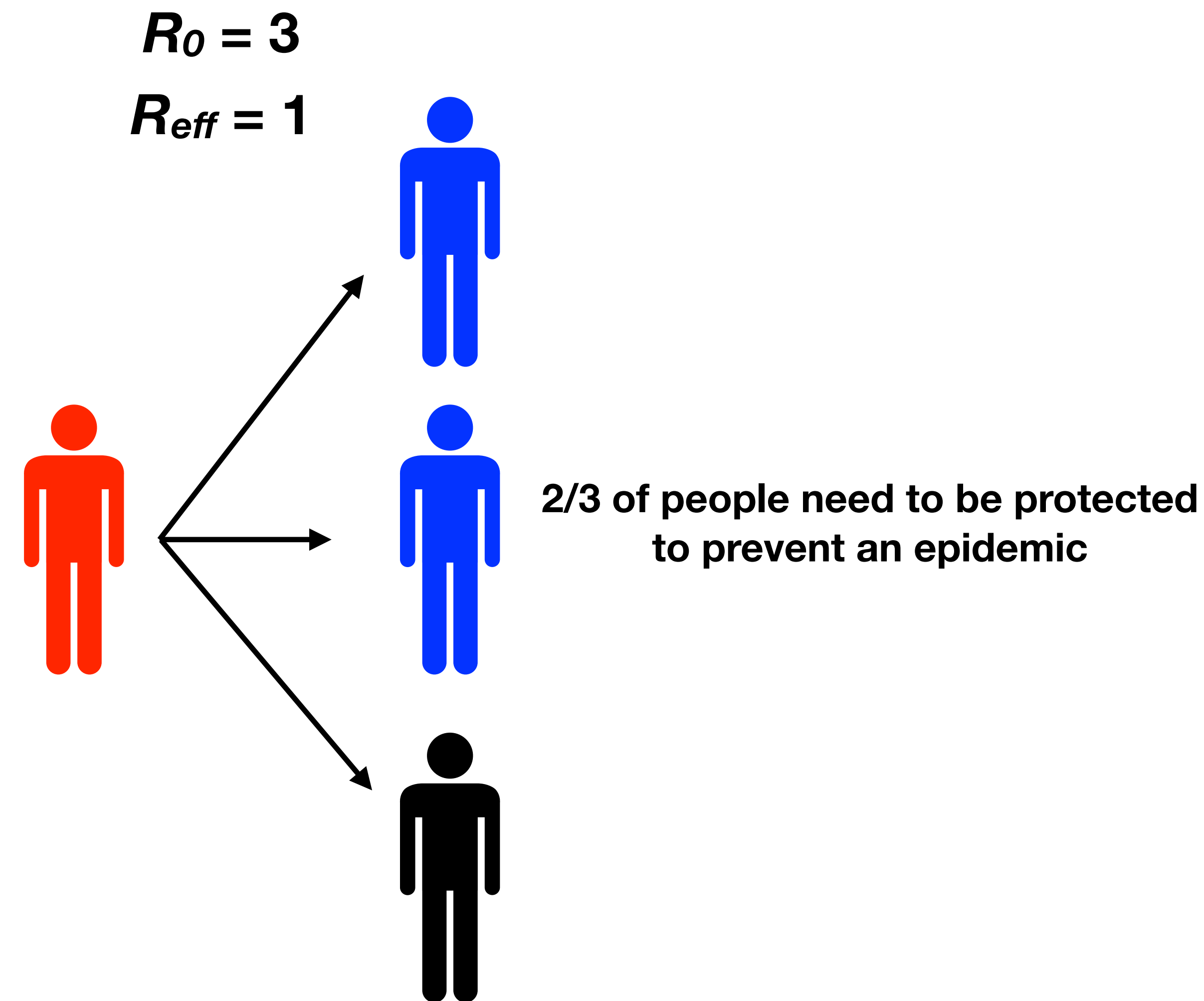
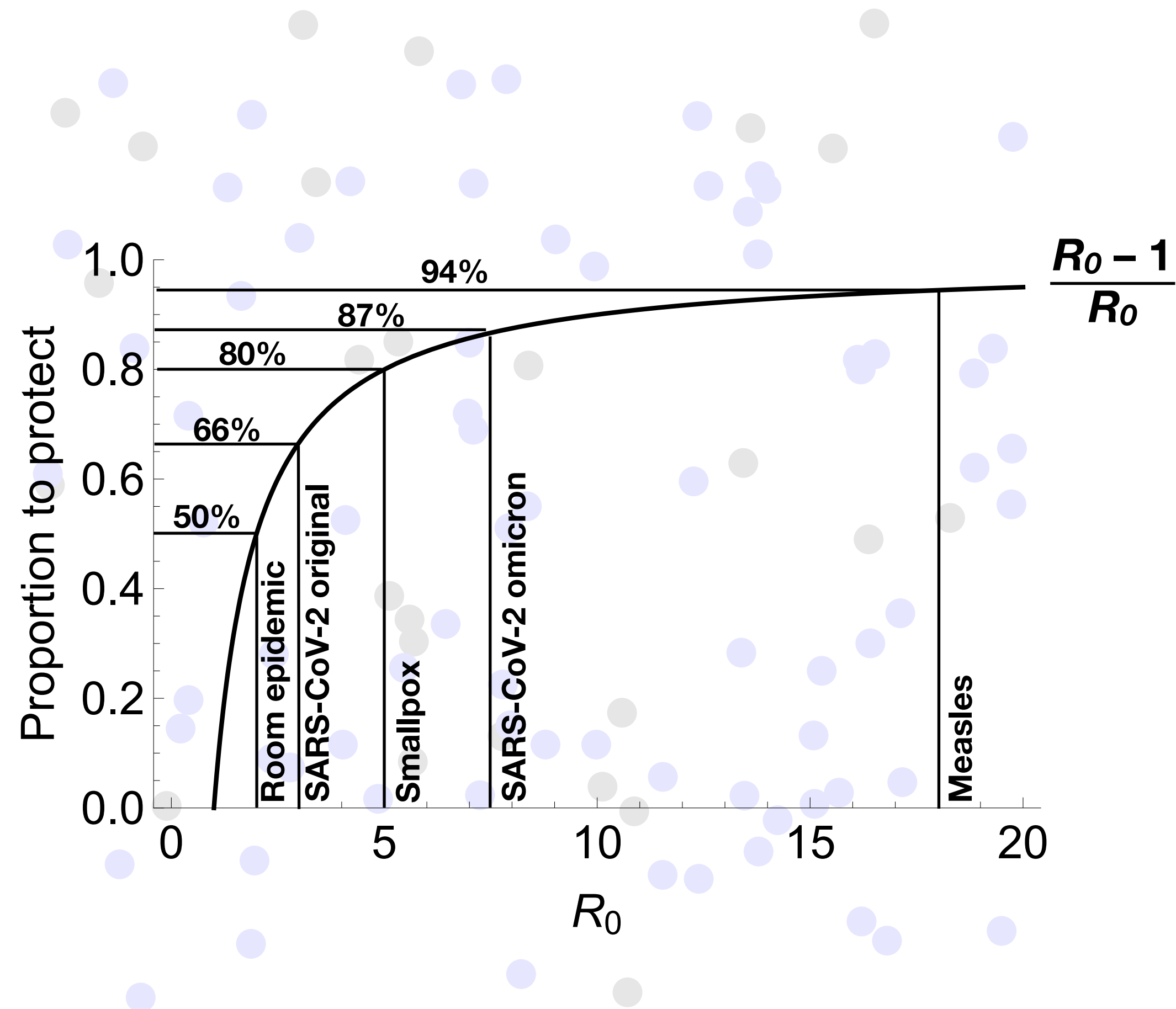


# What can we infer about epidemics from the SIR model?

## Herd immunity



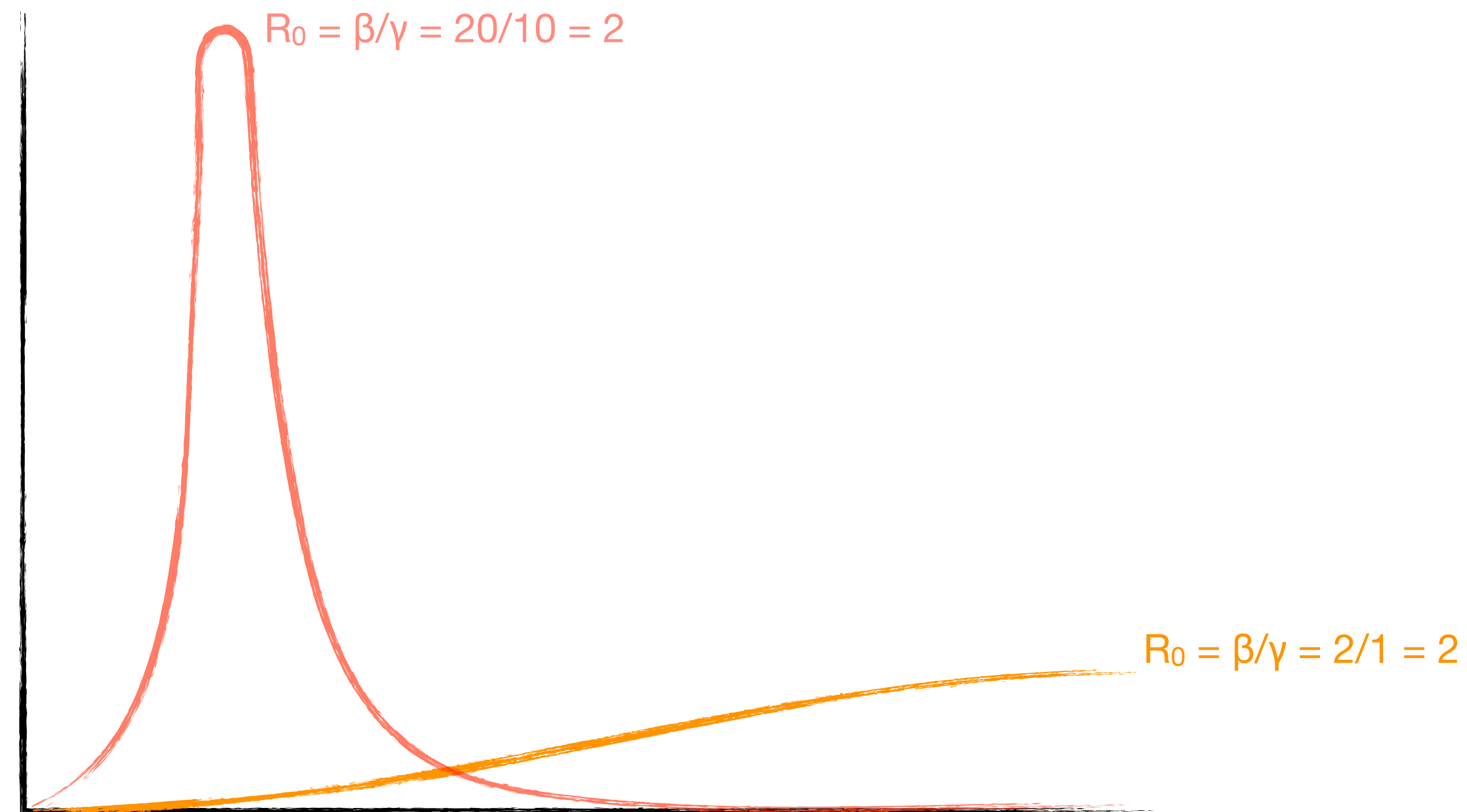
Recall that  $R_0 = \beta/\gamma$ . This gives us two possible ways of intervening:

1. Reduce  $\beta$  (through vaccination, distancing, masking, etc.)
2. Increase  $\gamma$  (speed up recovery, e.g. using treatments; or ensure isolation, which “shortens” the infectious period)

# What can we infer about epidemics from the SIR model?

## The generation interval

$R_0$  doesn't tell us everything we need to know about the dynamics of an epidemic...



We need to know something too about the speed at which those new infections are produced!

The time between the start of one infection and the start of a secondary infection that it has caused is the **generation interval**.